5 day old, 24 week, baby for screening evaluation

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Right sided grade 1 germinal matrix hemorrhage

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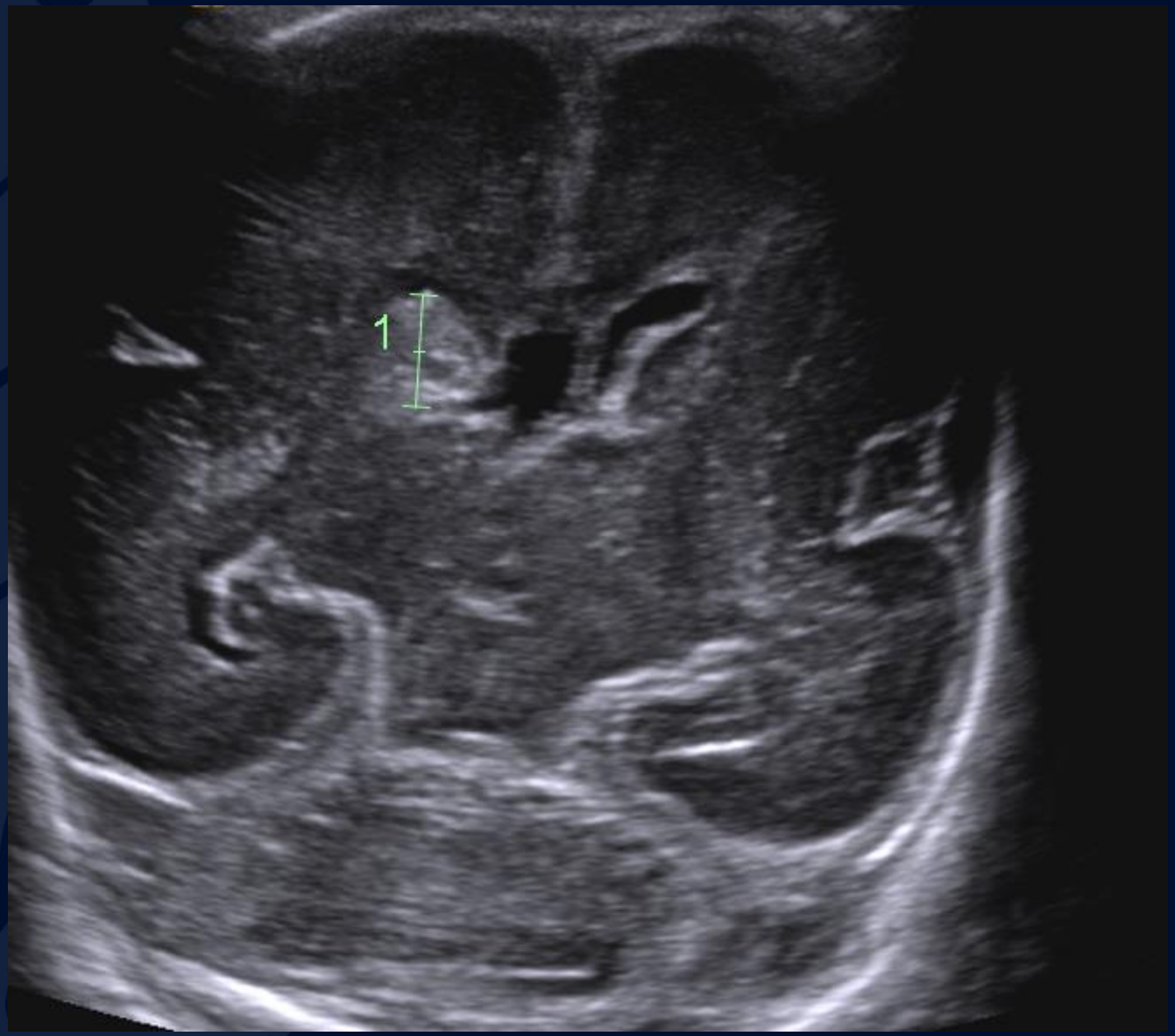

Coronal US demonstrates increased echogenicity in the right caudothalamic groove, measuring 6 mm(CC), consistent with grade 1 hemorrhage.

No intraventricular or parenchymal hemorrhage.

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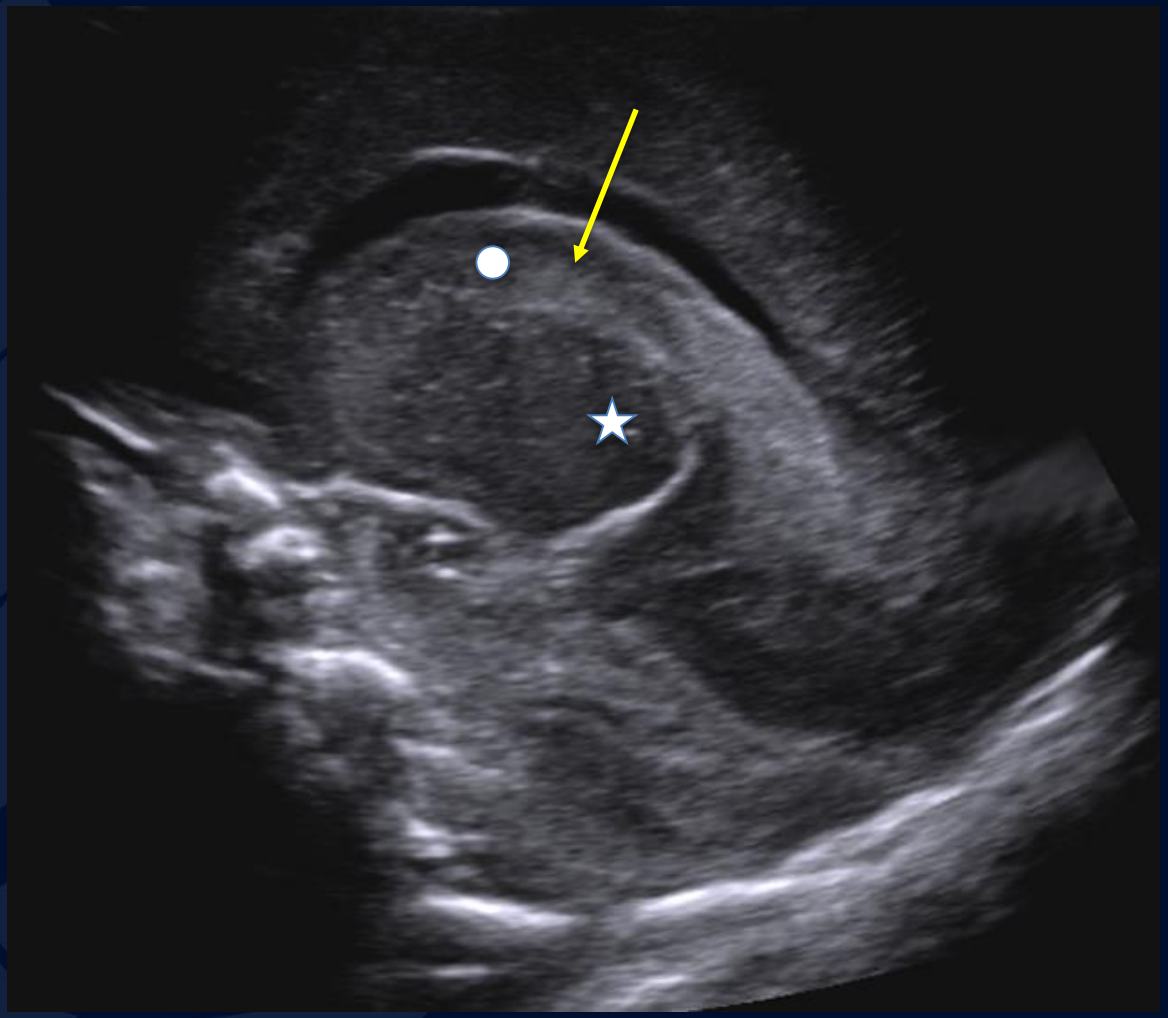

Right sagittal US demonstrates increased echogenicity in the caudothalamic groove (arrow). Circle: caudate; star: thalamus.

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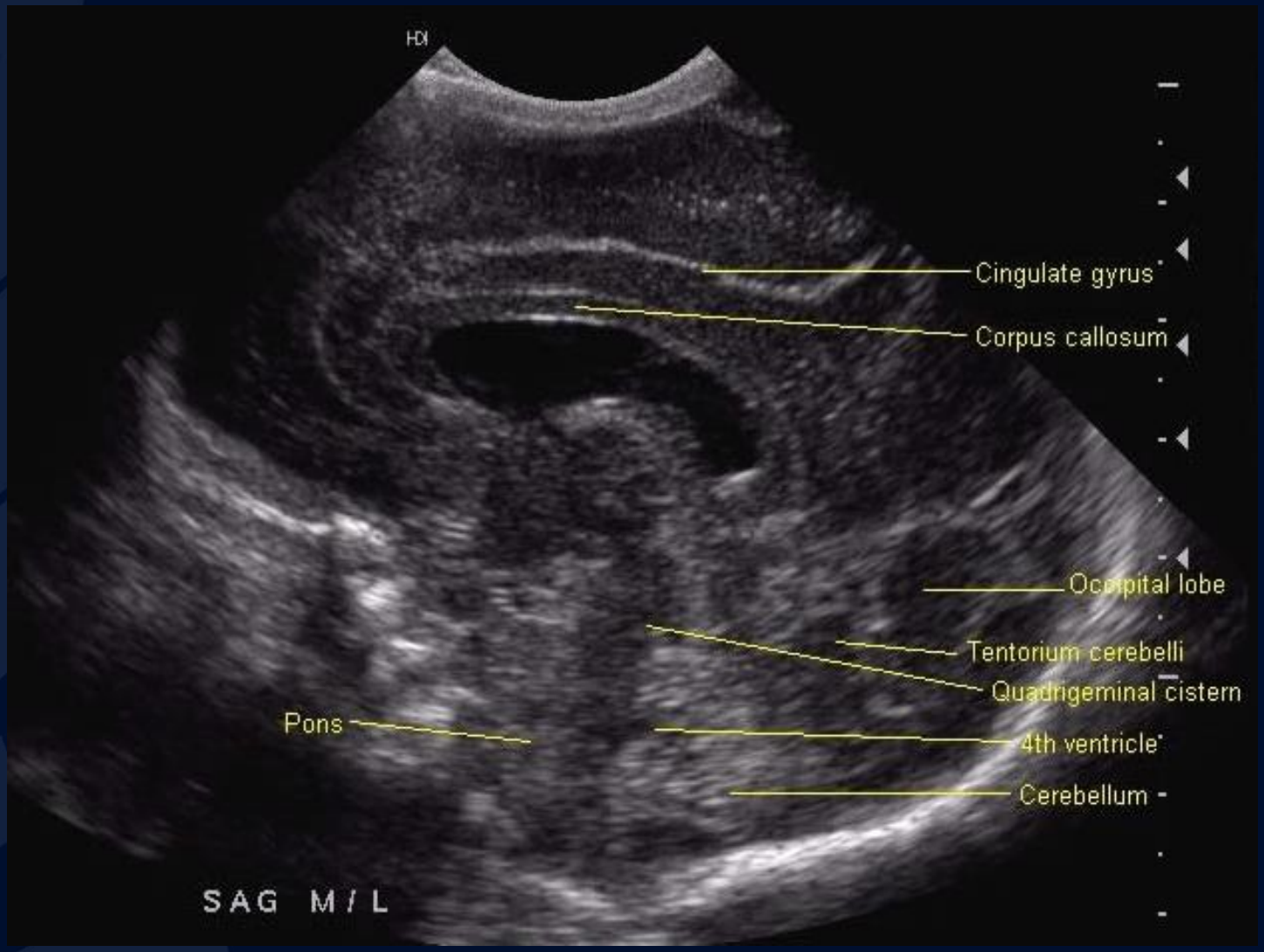

Normal midline sagittal ultrasound

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Germinal matrix hemorrhage (grade 1)

Germinal matrix hemorrhage (GMH), also known as periventricular hemorrhage or preterm caudothalamic hemorrhage occur in the highly vascular but also stress sensitive germinal matrix, located in the caudothalamic groove.

The germinal matrix is formed early during embryogenesis and is the site of glial and neuronal differentiation. From here cells migrate peripherally to form the brain. It is densely cellular and vascular. The blood vessels of the germinal matrix are weak walled and predisposed to hemorrhage. A significant stress experienced by a premature infant after birth may cause these vessels to rupture.

US is the modality of choice. Germinal matrix hemorrhages appear as echogenic regions close to the caudothalamic groove.

Classification is as follows: grade 1 (hemorrhage limited to subependymal matrix); grade 2 (hemorrhage extending into the ventricular system, <50%, without acute ventriculomegaly); grade 3 (hemorrhage extending into the ventricular system, with acute dilatation because of flooding of 50% or more of more or both lateral ventricles); grade 4 (grade 3 with parenchymal hemorrhage secondary to venous infarction caused by compression of deep terminal veins by an expanded ventricle filled with blood).

Ideal treatment is prevention of premature delivery. Antenatal dexamethasone administered to the mother or indomethacin administered to the infant also decreases the incidence. CFS drainage may be necessary if hydrocephalus is present.

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